

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer implemented method of matching a selectable user module with plurality of programmable hardware resources associated with ~~an~~ a predesigned programmable integrated circuit comprising:
 - a. displaying said selectable user module, wherein said user module is a representation of a configuration of a programmable circuit for implementation on said predesigned programmable integrated circuit;
 - b. in response to a selection of said selectable user module, comparing a description of a hardware resource requirement of said programmable circuit of said selectable user module with a description of said plurality of programmable hardware resources associated with said predesigned programmable integrated circuit; and
 - c. using a result of said comparing to identify and to display a first allowed programmable hardware resource of the predesigned programmable integrated circuit satisfying the hardware resource requirement of said programmable circuit of said selectable user module.
2. (Previously Presented) The method according to Claim 1 wherein the description of the hardware resource requirement of said selectable user module is represented as XML data.

3. (Currently Amended) The method according to Claim 1 wherein the description of the plurality of programmable hardware resources are represented as XML data.
4. (Original) The method according to Claim 1 further comprising highlighting the first allowed programmable hardware resource using a graphical user interface.
5. (Currently Amended) The method according to Claim 1 further comprising identifying a second allowed programmable hardware resource associated with said predesigned programmable integrated circuit satisfying the hardware resource requirement of said selectable user module.
6. (Original) The method according to Claim 5 further comprising highlighting the second allowed programmable hardware resource using said graphical user interface.
7. (Currently Amended) The method according to Claim 1 further comprising identifying a disallowed programmable resource associated with said predesigned programmable integrated circuit wherein the disallowed resource represents an unavailable resource associated with said predesigned programmable integrated circuit that otherwise satisfies the hardware resource requirement of said selectable user module.
8. (Original) The method according to Claim 7 further comprising highlighting the disallowed programmable resource using said graphical user interface.

9. (Original) The method according to Claim 8 wherein the disallowed programmable resource is highlighted in gray.

10. (Previously Presented) The method according to Claim 1 further comprising updating the description of the hardware resource requirement of said selectable user module.

11. (Previously Presented) The method according to Claim 10 wherein said updating is performed in response to changes in a hardware resource requirement of said selectable user module.

12. (Previously Presented) The method according to Claim 1 further comprising adding an additional selectable user module to the description of the hardware resource requirement of said selectable user module.

13. (Currently Amended) The method according to Claim 1 further comprising updating the description of the plurality of programmable hardware resources associated with said predesigned programmable integrated circuit.

14. (Currently Amended) The method according to Claim 13 further comprising adding an additional chip description to the description of the plurality of programmable hardware resources associated with said predesigned programmable integrated circuit.

15. (Currently Amended) An apparatus comprising:

a. a user module description database containing a description of a hardware resource requirement of a user module;

b. a hardware description database coupled to the user module description database and containing a description of a pre-existing hardware resource of an a predesigned programmable integrated circuit; and

c. a resource placement locator coupled to the user module description database and configured to compare the description of the hardware resource requirement of the user module with the description of the pre-existing hardware resource of the predesigned programmable integrated circuit.

16. (Original) The apparatus according to Claim 15 wherein the user module description database is represented as XML data.

17. (Original) The apparatus according to Claim 15 wherein the hardware description database is represented as XML data.

18. (Currently Amended) A computer implemented method of determining hardware resources for an electronic design comprising:

a) selecting an electronic design represented as a user module of predefined functionality implementable on a predesigned programmable electronic device;

b) accessing a data description of hardware resources required for implementing said user module on said predesigned programmable electronic device;

c) accessing data descriptions of a plurality of pre-existing programmable hardware resources of an said predesigned programmable electronic device on which to implement said user module; and

d) comparing said data description of said user module with said data descriptions of said plurality of pre-existing programmable hardware resources to

automatically determine potential placement options of said user module on said predesigned programmable electronic device, wherein each potential placement option represents one or more of said pre-existing programmable hardware resources selected to implement said user module.

19. (Original) A method as described in Claim 18 further comprising:

displaying on a graphical user interface, a first potential placement of said potential placement options; and

in response to a user selecting a next placement icon, displaying on said graphical user interface, a second potential placement of said potential placement options.

20. (Currently Amended) A method as described in Claim 19 wherein potential placement options are displayed using visual attributes and wherein said predesigned programmable electronic device is a programmable microcontroller device.

21. (Previously Presented) A method as described in Claim 18 wherein said user module requires one pre-existing programmable hardware resource to place.

22. (Previously Presented) A method as described in Claim 18 wherein said user module requires two pre-existing programmable hardware resources to place.

23. (Previously Presented) A method as described in Claim 18 wherein said plurality of pre-existing programmable hardware resources comprise a plurality of pre-existing analog programmable hardware resources and a plurality of pre-existing digital programmable hardware resources.

24. (Previously Presented) A method as described in Claim 18 wherein said comparing automatically prunes out pre-existing programmable hardware resources that do not satisfy requirements of said user module.

25. (Original) A method as described in Claim 18 wherein said data descriptions are created in XML.

26. (Currently Amended) A computer system comprising a processor coupled to a bus and a memory coupled to said bus and containing instructions that implement a method of determining hardware resources for an electronic design comprising:

a) selecting an electronic design represented as a user module of predefined functionality implementable on a predesigned programmable electronic device;

b) accessing a data description of hardware resources required for implementing said user module on said predesigned programmable electronic device;

c) accessing data descriptions of a plurality of pre-existing programmable hardware resources of ~~an~~ said predesigned programmable electronic device on which to implement said user module; and

d) comparing said data description of said user module with said data descriptions of said plurality of pre-existing programmable hardware resources to automatically determine potential placement options of said user module on said predesigned programmable electronic device, wherein each potential placement option represents one or more of said pre-existing programmable hardware resources selected to implement said user module.

27. (Original) A computer system as described in Claim 26 wherein said method further comprises:

displaying on a graphical user interface, a first potential placement of said potential placement options; and

in response to a user selecting a next placement icon, displaying on said graphical user interface, a second potential placement of said potential placement options.

28. (Currently Amended) A computer system as described in Claim 27 wherein potential placement options are displayed using visual attributes and wherein said predesigned programmable electronic device is a programmable microcontroller device

29. (Previously Presented) A computer system as described in Claim 26 wherein said user module requires one pre-existing programmable hardware resource to place.

30. (Previously Presented) A computer system as described in Claim 26 wherein said user module requires two pre-existing programmable hardware resources to place.

31. (Previously Presented) A computer system as described in Claim 26 wherein said plurality of pre-existing programmable hardware resources comprise a plurality of pre-existing analog programmable hardware resources and a plurality of pre-existing digital programmable hardware resources.

32. (Previously Presented) A computer system as described in Claim 26 wherein said comparing automatically prunes out pre-existing programmable hardware resources that do not satisfy requirements of said user module.

33. (Original) A computer system as described in Claim 26 wherein said data descriptions are created in XML.